IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND the claims in accordance with the following:

1. (CURRENTLY AMENDED) A system comprising:

a closed loop topology adapted to WDM signal light obtained by wavelength division multiplexing a plurality of optical signals; and

a plurality of nodes arranged along said closed loop topology;

each of said nodes comprising:

a first optical amplifier for amplifying input signal light;

an optical demultiplexer for separating signal light output from said first optical amplifier into a plurality of optical signals;

an optical switch adapted to operate on a plurality of optical signals output from said optical demultiplexer;

an optical multiplexer for wavelength division multiplexing a plurality of optical signals output from said optical switch;

a second optical amplifier for amplifying signal light output from said optical multiplexer; and

a control unit for controlling said first and second optical amplifiers;

said control unit comprising:

first means for transmitting the number of channels of WDM signal light to be output from ~~the~~ a corresponding node to ~~the~~ a node immediately downstream of the corresponding node;

second means for controlling said first optical amplifier so that ~~the~~ an output from said first optical amplifier becomes constant, according to the number of channels of WDM signal light received from the node immediately upstream of the corresponding node; and

third means for controlling said optical switch so that the optical signals other than one or more optical signals added to the corresponding node are not output from the corresponding node until the control by said second means is converged.

2. (ORIGINAL) A system according to claim 1, wherein said third means comprises means for switching paths in said optical switch.

3. (ORIGINAL) A system according to claim 1, wherein said third means comprises means for attenuating the optical signals passing through said optical switch.

4. (CURRENTLY AMENDED) A system comprising:

a closed loop topology adapted to WDM signal light obtained by wavelength division multiplexing a plurality of optical signals; and

a plurality of nodes arranged along said closed loop topology;

each of said nodes comprising:

a first optical amplifier for amplifying input signal light;

an optical demultiplexer for separating signal light output from said first optical amplifier into a plurality of optical signals;

an optical switch adapted to operate on a plurality of optical signals output from said optical demultiplexer;

an optical multiplexer for wavelength division multiplexing a plurality of optical signals output from said optical switch;

a second optical amplifier for amplifying signal light output from said optical multiplexer; and

a control unit for controlling said first and second optical amplifiers;

said control unit comprising:

first means for transmitting the number of channels of WDM signal light to be output from ~~the~~ a corresponding node to ~~the~~ a node immediately downstream of the corresponding node;

second means for controlling said first optical amplifier so that ~~the~~ an output from said first optical amplifier becomes constant, according to the number of channels of WDM signal light received from the node immediately upstream of the corresponding node;

third means for stopping the control by said second means when the number of channels received is changed; and

fourth means for restarting the control by said second means after different time periods in said plurality of nodes have elapsed from the time of stopping by said third means.

5. (ORIGINAL) A system according to claim 4, wherein said third means comprises means for interrupting the output from said first optical amplifier.

6. (ORIGINAL) A system according to claim 4, wherein said third means comprises means for switching the control of said first optical amplifier to automatic gain control.

7. (ORIGINAL) A system according to claim 4, wherein said fourth means comprises a random number generator for obtaining said different time periods.

8. (ORIGINAL) A system according to claim 4, wherein said fourth means comprises a specific value generator for obtaining said different time periods.

9. (ORIGINAL) A system according to claim 8, wherein said specific value generator stores different values in said plurality of nodes.

10. (CURRENTLY AMENDED) A method comprising the steps of:

providing a closed loop topology using an optical fiber applicable to WDM signal light obtained by wavelength division multiplexing a plurality of optical signals;

providing a plurality of nodes each including an optical amplifier along said closed loop topology; and

controlling each of said nodes;

said controlling step comprising:

a first step of controlling said optical amplifier so that ~~the~~ an output level from said optical amplifier becomes a constant level, according to ~~the~~ a number of channels of the WDM signal light received from ~~the~~ a node immediately upstream of ~~the~~ a corresponding node; and

a second step of interrupting the optical signals other than one or more optical signals added to the corresponding node until the output level from said optical amplifier is converged to said constant level ~~the control~~ by said first step ~~is converged~~ of controlling.

11. (ORIGINAL) A method according to claim 10, wherein said second step comprises the step of providing an optical switch adapted to operate on said plurality of optical signals.

12. (ORIGINAL) A method according to claim 10, wherein said second step comprises the step of providing a plurality of attenuators for respectively attenuating said plurality of optical signals.

13. (CURRENTLY AMENDED) A system comprising:

a closed loop topology using an optical fiber applicable to WDM signal light obtained by wavelength division multiplexing a plurality of optical signals; and

a plurality of nodes arranged along said closed loop topology, each of said nodes including an optical amplifier;

each of said nodes comprising:

first means for controlling said optical amplifier so that ~~the~~ an output level from said optical amplifier becomes a constant level, according to ~~the~~ a number of channels of the WDM signal light received from ~~the~~ a node immediately upstream of ~~the~~ a corresponding node; and

second means for interrupting the optical signals other than one or more optical signals added to the corresponding node until the output level from said optical amplifier is converged to said constant level ~~the control~~ by said first means ~~is converged~~.

14. (ORIGINAL) A system according to claim 13, wherein said second means comprises an optical switch adapted to operate on said plurality of optical signals.

15. (ORIGINAL) A system according to claim 13, wherein said second means comprises a plurality of attenuators for respectively attenuating said plurality of optical signals.

16. (CURRENTLY AMENDED) A method comprising the steps of:

providing a closed loop topology using an optical fiber applicable to WDM signal light obtained by wavelength division multiplexing a plurality of optical signals;

providing a plurality of nodes each including an optical amplifier along said closed loop topology; and

controlling each of said nodes;

said controlling step comprising:

a first step of controlling said optical amplifier so that ~~the~~ an output from said optical amplifier becomes constant, according to the number of channels of WDM signal light received from ~~the~~ a node immediately upstream of ~~the~~ a corresponding node;

a second step of stopping the control by said first step when the number of channels received is changed; and

a third step of restarting the control by said first step after different time periods in said plurality of nodes have elapsed from the time of stopping by said second step.

17. (ORIGINAL) A method according to claim 16, wherein said second step comprises the step of interrupting the output from said optical amplifier.

18. (ORIGINAL) A method according to claim 16, wherein said second step comprises the step of switching the control of said optical amplifier to automatic gain control.

19. (ORIGINAL) A method according to claim 16, wherein said third step comprises the step of providing a random number generator for obtaining said different time periods.

20. (ORIGINAL) A method according to claim 16, wherein said third step comprises the step of providing a specific value generator for obtaining said different time periods.

21. (ORIGINAL) A method according to claim 20, wherein said specific value generator stores different values in said plurality of nodes.

22. (CURRENTLY AMENDED) A system comprising:

a closed loop topology using an optical fiber applicable to WDM signal light obtained by wavelength division multiplexing a plurality of optical signals; and

a plurality of nodes arranged along said closed loop topology, each of said nodes including an optical amplifier;

each of said nodes comprising:

first means for controlling said optical amplifier so that ~~the~~ an output from said optical amplifier becomes constant, according to the number of channels of WDM signal light received from ~~the~~ a node immediately upstream of ~~the~~ a corresponding node;

second means for stopping the control by said first means when the number of channels received is changed; and

third means for restarting the control by said first means after different time periods in said plurality of nodes have elapsed from the time of stopping by said second means.

23. (ORIGINAL) A system according to claim 22, wherein said second means comprises means for interrupting the output from said optical amplifier.

24. (ORIGINAL) A system according to claim 22, wherein said second means comprises means for switching the control of said optical amplifier to automatic gain control.

25. (ORIGINAL) A system according to claim 22, wherein said third means comprises a random number generator for obtaining said different time periods.

26. (ORIGINAL) A system according to claim 22, wherein said third means comprises a specific value generator for obtaining said different time periods.

27. (ORIGINAL) A system according to claim 26, wherein said specific value generator stores different values in said plurality of nodes.

28. (CURRENTLY AMENDED) An optical transmission system comprising a transmission line and a plurality of nodes arranged along said transmission line for adding and dropping one or more optical signals of WDM signal light;

each of said nodes having an optical amplifier;

said optical amplifier being controlled so that ~~the~~ an output from said optical amplifier becomes constant, according to the number of channels of WDM signal light received from ~~the~~ a node immediately upstream of ~~the~~ a corresponding node;

the optical signals received from said immediately upstream node being not output to the node immediately downstream of the corresponding node until the output from said optical amplifier is converged to a constant level.

29. (CURRENTLY AMENDED) An optical transmission system comprising a transmission line and a plurality of nodes arranged along said transmission line for adding and dropping one or more optical signals of WDM signal light;

each of said nodes having an optical amplifier;

said optical amplifier being controlled so that ~~the~~ an output from said optical amplifier becomes constant, according to the number of channels of WDM signal light received from ~~the~~ a node immediately upstream of ~~the~~ a corresponding node;

the control of said optical amplifier being stopped when the number of channels of WDM signal light received is changed;

the control of said optical amplifier being restarted after a predetermined time period has elapsed from the time of stopping the control of said optical amplifier.

30. (CURRENTLY AMENDED) An optical transmission system for adding and dropping one or more optical signals of WDM signal light, said optical transmission system being connected to an optical transmission line;

said optical transmission system comprising:

a first optical amplifier for amplifying light from said optical transmission line;

an optical demultiplexer for separating an output from said first optical amplifier into a plurality of optical signals having different wavelengths;

an optical switch for inputting said optical signals from said optical demultiplexer and said one or more optical signals added to switch among through, add, and drop paths;

a second optical amplifier for amplifying an output from said optical switch; and

a control unit for controlling said first optical amplifier so that ~~the~~ an output from said first optical amplifier becomes constant, according to the number of channels of WDM signal light transmitted by said optical transmission line, and interrupting said input optical signals other than said one or more optical signals added until the output from said first optical amplifier is converged to a constant level.

31. (ORIGINAL) An optical transmission system for adding and dropping one or more optical signals of WDM signal light, said optical transmission system being connected to an optical transmission line;

said optical transmission system comprising:

a first optical amplifier for amplifying light from said optical transmission line;

an optical demultiplexer for separating an output from said first optical amplifier into a plurality of optical signals having different wavelengths;

an optical switch for inputting said optical signals from said optical demultiplexer and said one or more optical signals added to switch among through, add, and drop paths;

a second optical amplifier for amplifying an output from said optical switch; and

a control unit for controlling said first optical amplifier so that the output from said first optical amplifier becomes constant, according to the number of channels of WDM signal light transmitted by said optical transmission line, stopping the control of said first optical amplifier when the number of channels of WDM signal light transmitted by said optical transmission line is changed, and restarting the control of said first optical amplifier after a predetermined time period has elapsed from the time of stopping the control of said first optical amplifier.